

# Funguana - A Consumer Facing AI Trading System With Decentralized Data Acquisition and AI Coordination

Retail cryptocurrency investors have lost massive amounts of money inside of the cryptocurrency market during the 2018 year. This is due to the economic infeasibility of researching in the industry, susceptibility to scams and systemic problems. This whitepaper aims to present **Funguana**, the algorithmic trading system that doesn't hold the user's funds, the reasoning behind creating the app, as well as layout a path to use the FNG token to incentivize and decentralize the development of the application.

## The Inspiration

Under normal circumstances, a cryptocurrency whitepaper contains a general concept of an application without exploring the mindset and story of the user in which it aims to serve, nor without exploring the larger ramifications and context for building a given application. The aim is usually to let the community discover the possibilities using **emergent processes**, yet sometimes the creator of certain applications have a wildly different perspective and vision for how the foundation of a given project can grow that isn't in the normal realm of thinking.

The political conflict stemming between Bitcoin and Bitcoin Cash are good examples of not having a long-term vision set. While the idea of Bitcoin was ingenious, because there was no long-term vision for the direction of Bitcoin at the very beginning, people are debating what should happen now. In the spirit of a being a master-economist (as explored in the quote below), these are things we aim to abstractly and concretely explore. We will talk about **the user** and the possible **long-term effects** of the application. From there, we'll dig deeply into how the application can be integrated into the Tron platform.

“The master-economist must possess a rare combination of gifts . . . . He must be mathematician, historian, statesman, philosopher—in some degree. He must understand symbols and speak in words. He must contemplate the particular, in terms of the general, and touch abstract and concrete in the same flight of thought. He must study the present in the light of the past for the purposes of the future. No part of man's nature or his institutions must be entirely outside his regard. He must be purposeful and disinterested in a simultaneous mood, as aloof and incorruptible as an artist, yet sometimes as near to earth as a politician.” - **John Keynes**

## The User Persona

After Steve Jobs returned to Apple in 1997, Steve demanded that developers think heavily about the users they developed for throughout all fundamental parts of the development process. The company was one of the key pioneers in User Experience design. They used a method of research called User Personas. The user persona is a way to peer into the life of an individual. When it's done well, a team will be able to see in detail the habits, beliefs and motivations of a person. Which they can then design solutions around. Before diving into the solution below, let's first define a target, then consider how that person thinks about cryptocurrency. This requires a bit of imagination, yet the hope is that the reader will better understand the reasoning behind the app before a solution is enacted upon.

### Persona Name: Alice

Meet Alice. Alice is a busy mom in the film production industry living in the suburbs of LA. While it's a reasonably demanding career she manages to work consistent hours throughout the work week. She has a 6 year old son that's hyperactive and a set of twins that were born just 8 months prior. The job ahead of her is intense. Everyday, she wakes at 4:30am to exercise and take care of herself, shower, then wake the kids up; the 6 year old for school, and the 8 month olds for daycare. She makes sure the 6 y/o brushes his teeth and that the kids eat breakfast before driving them to school.

Her husband, Bob, is a lawyer that works intense hours daily. Usually it's up to 10-12 hours a day, 6 days a week. Sometimes he's on a trip to meet his clients and work through deals. To balance life, he usually stays up a few more hours for Alice and the kids before sleeping. It means he gets around 5 hours of sleep daily. Therefore he wakes later than Alice, usually just before the kids go to school, to kiss them off. When he returns, the time usually goes towards playing with the kids and building his relationship with Alice.

Relationships take a lot of work. Realizing this, they schedule date nights 2-3 times a week, and to grow their relationships with their kids by dedicating some time on the weekend to go watch movies with the 6 y/o and maybe grab some ice cream. The relationship building time makes the week very busy, yet they're happy they do it often.

Sometimes, as Alice is getting ready in the morning she turns to CNBC so she can passively watch it as she gets dressed, and so Bob can passively watch it as he's slowly waking up. They see something about Bitcoin one day. Interested in what it is, Alice does some research on it as she's making breakfast for the kids. She likes the vision, but has to go drop off the kids. She loads the kids into the car, then starts driving to her necessary destination before heading to work.

Alice, interested to know more about cryptocurrencies, asks her co-worker about them. He talked a lot about it a few months ago, then stopped for some reason. She ask him what is it like. He got scammed by an app called Bitconnect. \$5000 dollars lost. Believing that it might be a small incident, she goes on the internet to find the Reddit community. Somebody is complaining about an ICO not producing what they invested their money in. That's all she needed to know. After 20 minutes of getting a first impression of blockchain through the scope of an intensely busy life, she's a bit mystified. She's feeling hopeless and doesn't know where to begin. There are just so many things to research and learn. She has no tech background, and everything she's been seeing points to a scam. She's turned off and avoidant of the industry. She stays away instead.

## The Problem

A common phrase we see in the industry is “**do your own research.**” It's generally pointed towards investors, but can be stated as advice pointed to everyone in the cryptocurrency industry. It's over-stated just incase an unassuming user gets scammed. Looking at the user Alice from above, we can reason that she represents a common demographic. She would be classified as normal user of the world. Most people are not tech businessmen, investment banker, investors, or technologist in this group. The normal user, people like Alice, become interested and are scared away by the massive flood of information they have to process without any reasonable common knowledge. More so, some have their own heavy responsibilities like kids, businesses and their family to worry about. Getting scammed or foolishly placing their money into the wrong place is not something many people can afford to do.

Most people in the world aren't tech college students, long-time engineers or recent grads that live in silicon valley. It becomes clear to see, **the people that the blockchain will help the most are the same people that can't do research all of the time.** Meaning the advice “**Do your own research**” is dangerous. This problem becomes more clear in Nic Carter's article: The Dark Side of The Crypto Markets. Nic goes through the efforts of explaining the hazards of the cryptocurrency market, showing how retail investors get the short end of the stick 95% of the time .

The cryptocurrency market is menacing to the general consumer. The price instability and system-wide scams, are a turn off for people that can't make crypto a priority in their life.

This is a problem that's not very obvious on the surface. That's because there are generally entirely inactive segments of the market not entering. They aren't voicing their opinions, they aren't complaining about it. Quite the contrary, the normal consumer, such as the single mom, the corporate attorney, the physics researcher tight on grant money. These people aren't thinking about

cryptocurrency, and when they can, they aren't able to research heavily like your average tech millionaire investor. They stay away, remaining silent, and the industry continues a form of an eco-chamber largely ignoring these consumers.

This is a key problem. By solving it, we can cause an influx of Trillions of dollars to enter the market while reducing the negative aspects common investors may face.

There are others that will be highlighted as we look at the long-term possibilities of the solution.

## The Solution

### User Review

Before jumping into a solution, lets review what was recently talked about. Not all customers and investors have the time to research the investments they want to make. Often times it's due to their previous obligations, and sometimes a lack of technical understanding, as they were educated in a different industry, or not educated at all.

Incentive wise, however, user's do want to have stability, and they want more percentage gains than their banks are willing to offer on savings accounts (often less than 0.01% a year in interest). The more money a person has to pay for services for their kids, job and to service debt, the more productive a person can be, and the more they can be open to investing into cryptocurrencies.

**If we know people want an aspect of the cryptocurrency industry, and we know people can't gain it due to not being able to do research, the best thing to do is bridge the gap for what people need.**

### What Is The Solution?

**Funguana aims to become an international decentralized algorithmic trading system for crypto-assets.** Where customers would have 100% control over their funds to prevent possible fraud. We instead would have access to trade on their exchange accounts (using exchange keys) and on Tron DAPPs. This fund would predict and understand fraud across the planet, and defensively protect and grow user's funds. Defense is the best offense.

## An analysis of *why* we want to build Funguana

Beyond making money, creating a system like this has exponentially more positives than negatives. Many effects are initially unforeseeable until time works its magic. In this segment, prior to explaining abstract details about how the project will work, we'll first go through the benefits of having a system like this. The section will be educational, as it'll explain possibly a new form of thinking to the readers.

### Systems Thinking

*It's necessary that we learn the systems paradigm now to make sense of the rest of this paper.* Systems thinking is a paradigm. In science, there are two primary paradigms. The first is analysis. It's a reductionist approach to looking at life, where the researcher will break something apart to understand the whole. This is primarily adopted by physicist and other scientist that deal with inert information. The other is synthesis, where we try to understand the whole of something by understanding the relations. This is commonly adopted in fields where changes in one thing causes massive dynamic changes else where, such as business and ecology.

Systems thinking is based on the idea of synthesis. According to techtarget, they explain systems thinking in the following way:

Systems thinking is a holistic approach to analysis that focuses on the way that a system's constituent parts interrelate and how systems work over time and within the context of larger systems.

The method was largely adopted by ecologist initially, as a change in one species causes effects on an entire ecosystem. More recently Peter Senge, a lecturer and researcher at MIT Sloan Business School<sup>1</sup>, explored the field of systems thinking in business, and has found great success in applying the techniques to improve the business practices for companies like Apple and Ford. Instead of the jargon, lets begin with some examples.

### Systems Thinking Examples:

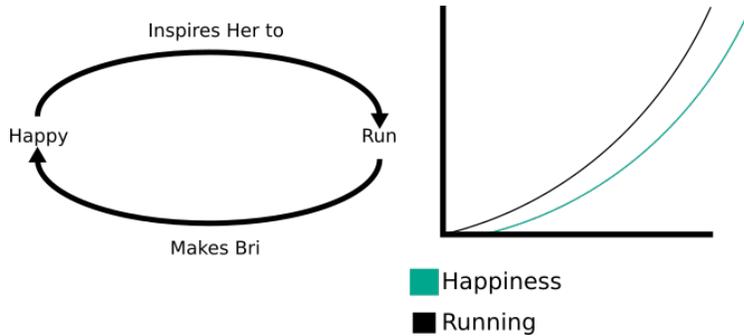
#### Discoverer of Runner's High

Bri is a girl that started running down the block multiple times. She started growing in happiness. Because she was happy she decided to run more. Over time, Bri became happier because she was running.

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<sup>1</sup>The Fifth Discipline [^](<https://www.panview.nl/en/change-management/fifth-discipline-senge-summary>)

Should this cycle continue, Bri will perpetually get happier and will run more. See the diagram below to know how we'd illustrate this.



### The Sad Man

Jim is a man that ran into problems and started going to the bar a little more than he usually does after work. Because of this, his brain is slightly more depressed, he performs less at work, then feels stress because of it. Therefore Jim drinks a bit more after work. Jim now feels pressure from his friends and family because he can't perform up to par. In response he now drinks more, instead of drinking at the bar, he drinks cheaper alcohol at home. Eventually alcoholic tendencies emerge. Keep in mind, this feedback loop is not guaranteed to form. The relationship people have with drinking changes everything. It could make them happy and have better relationships, which might actually reduce drinking.

Jim is sad all the time because he drinks and drinks because he's sad, therefore he drinks. This cycle continues until he reaches inevitable failure. See the diagram below to see how we'd illustrate this.



These are simple *systems thinking* models. Why is this important to know? The simple answer, systems thinking allows us to see the long-term effects of actions. If we know the systems to put in place, we can create virtuous emergent properties.

## Systemizing The Decentralizing Processing System

Now that we better understand what systems thinking is, explaining what Funguana can provide in a systemic way. It should be understood that the system would be more powerful than just the system itself. The externalities can benefit more groups than one. First, let us read three quotes that prime us for understanding:

*“Making an investment decision is like formulating a scientific hypothesis and submitting it to a practical test. The main difference is that the hypothesis that underlies an investment decision is intended to make money and not to establish a universally valid generalization”*  
- **George Soros**

*“There is an excellent correlation between giving society what it wants and making money, and almost no correlation between the desire to make money and how much money one makes.”* - **Ray Dalio**

*“I believe that understanding what is good is obtained by looking at the way the world works and figuring out how to operate in harmony with it to help it evolve.”* - **Ray Dalio**

It should be best understood, Funguana isn't labeling itself as a hedge fund, nor is it labeling itself as a trading group. Instead, it's will be a fully self-sustaining economic research initiative. Self-sustaining and self-reinforcing, where it'd be heavily incentivized to create new crypto-economic research in pursuit of earning profits and stability for users. It'll be a self-boosting system, self-maintaining, and will produce forms of science that will turn any cryptocurrency protocol that takes on this system, and turn them into the top over time.

### Key Components

The systemic process has the following components:

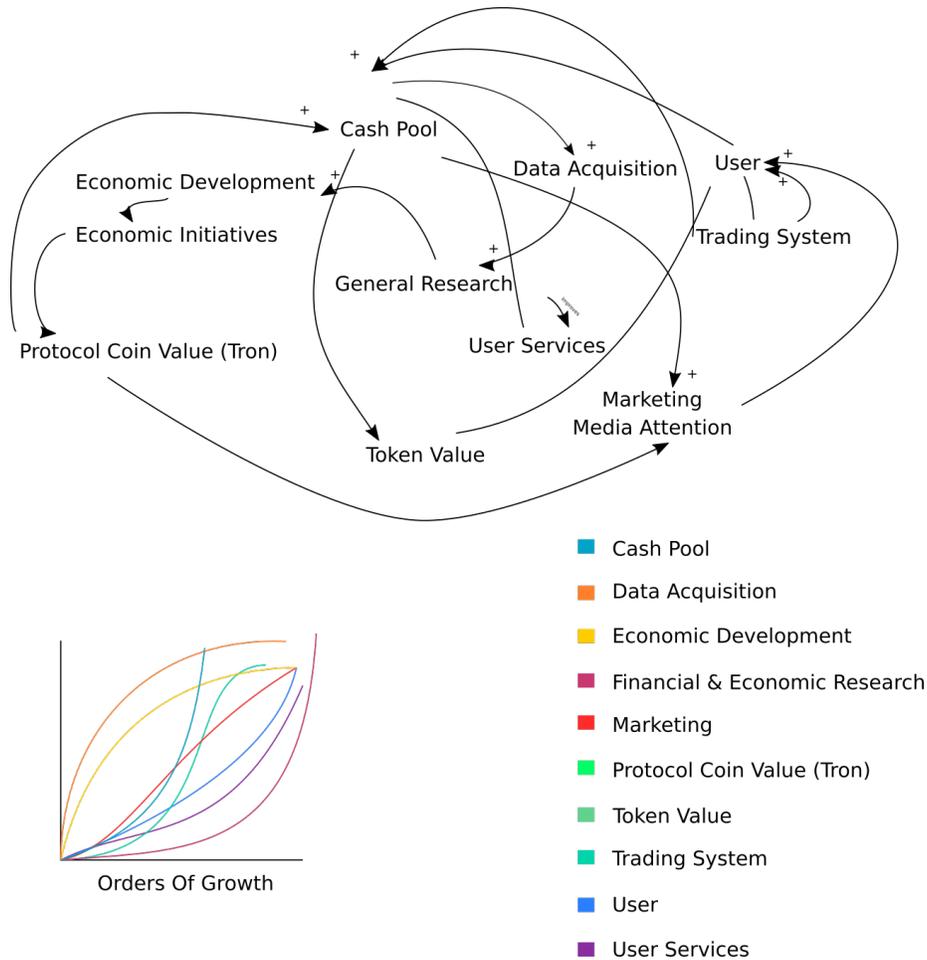
1. Users & User Satisfaction
2. User Services
3. Data Acquisition
4. Research
5. Protocol development
6. Cash Pool
7. Economic Development
8. Token Value
9. Protocol Coin Value (Tron)
10. Marketing

The inter-connections between these processes exponentially reinforce themselves, and can yield powerful effects on all actors involved: The user, the analysis system and the hosting protocol.

## **Key Interactions**

1. Users - Use Trading Bot
2. Users - Pay Money - Increase Cash Pool - Increase Token Value (using various mechanisms) - Increase Cash Pool
3. Increase Cash Pool - Increase Research - Improve Bot - Improve User Earnings - Increase User Happiness
4. Improve Bot - Trade Internally - Increase Cash Pool
5. Increase Research - Improve Protocol Development - Improve Crypto-Asset - Improve Asset Price - Improve Cash Pool
6. Improved Research - Improved Economic Development - New Economic Initiatives - New Forms Of Currencies - Improve Crypto-Asset Pricing
7. Increase Cash Pool - Increase User Experience and Customer Service - Increase Satisfaction - Increase User

That system looks a lot like the diagram below.



## Explicit Benefits

The chart might not be the most understandable thing. Let's explore the benefits explicitly:

1. As we sign-up more users, we'll have more cash due to subscriptions
2. As we get more media attention, we'll get more people interested in submitting data access pipelines
3. As we get more data, we can use that data to create better research
4. As we generate better research, we will create a better bot, improve the customer experience and therefore make the user happier. They, in turn, will recommend more users, which would cause the amount of cash to increase.
5. As we generate better research, we can propose new economic initiatives

and additions to the protocol, which would cause Tron to increase in value, and improve the community attention.

6. An increase in Tron coin value would cause every project's value to increase, and would produce funds to allow for better collaboration.
7. More cash from subscriptions and our internal trading system would allow us to buy-back **FNG** token, and therefore raise value.
8. With an increase in infrastructure through the trading system, we can better process the large data sets, and implement research exponentially faster.

### Limits to growth

The main two limits to growth are infrastructure, and hiring talented engineers/scientist. That is because, without the correct infrastructure, we wouldn't be able to acquire enough information real-time, and make a decision. Also, without good engineers we wouldn't be able to do the right kind of research over time.

### How we solved our limits to growth

We've set the foundation of finding and building relationships with great engineers at locations like Cornell, MIT, Harvard, UC Berkely, and some excellent lesser-known schools like RIT.

For the pre-alpha, we focused on infrastruture first to excel at initial data acquisition and large-scale event-based backtesting, where backtest is performed step-by-step, not knowing the outcome of each decision.

### Financial Engineering, The Field

Financial engineering is especially effective in this industry. In recent articles (at the time of writing this), we see that rebalanced portfolios performed better than portfolios that HODLED in the cryptocurrency industry.<sup>2</sup>

Knowing this, it should also be understood that some hedgefunds, like Renaissance Technologies<sup>3</sup>, and Bridgewater Associates<sup>4</sup>, can return relatively consistent gains under the right circumstances, and they even aid in country wide economic development. Why? Because they were able to gain a reasonably powerful understanding of the financial markets early in the inception of financial

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<sup>2</sup>Study Finds Cryptocurrency Rebalance Portfolios Outperform 'Hodling' [<sup>^</sup>](<https://news.bitcoin.com/study-finds-cryptocurrency-rebalance-portfolios-outperform-hodling/>)

<sup>3</sup>The mathematician who cracked Wall Street [<sup>^</sup>](<https://www.youtube.com/watch?v=U5kIdtMJGc8>)

<sup>4</sup>Rising debt, income inequality [<sup>^</sup>](<https://www.marketwatch.com/story/the-next-financial-crisis-will-threaten-capitalism-and-democracy-ray-dalio-warns-2018-09-13>)

engineering, and they were heavily required to understand the markets, and create solid principles for understanding the markets through depressions and market highs.

It could be believed that because the markets are early for cryptocurrencies, that the same thing can be achieved. There's less players in the market compared to the equities market or stock market, and the movements of the market are simpler to exploit.

## **Funguana, The Product**

We noticed a few things when dealing heavily with the cryptocurrency market. There were competitors, yet they all had various issues for the user.

### **Competitor Problems**

#### **Inaccessible**

Blockchains will run the world. However, they're inaccessible in many ways. People have to worry about getting their stake into cryptocurrency, and directly after need to be able to find coins they support, watch prices, manage risk on their own, and worry about losing money all of the time. It requires a lot of work and drives people away from cryptocurrencies.

Many of the most advanced trading bots are only available using already open source trading bots or hedge funds. People inside of the cryptocurrency industry want to use these trading bots (as seen inside of post in the footer), however, they're heavily locked down for the common person.

#### **Poor Usability**

Many of the platforms that partially try to solve the problem require the user to touch too many controls to get the bot working. This is also seen using bots that you have to install on the computer (i.e gunbot). That makes it so even though users are able to get access to some trading bots, the controls still make it inaccessible to most people.

Funguana has focused entirely on creating a usable platform from day 1. We reduce the number of controls and work hard in the background to ensure people's money is managed well using advanced forms of data analytics.

### **Terrible Customer Service**

Cryptocurrency is money to people. Money is the life and blood of human society. If people can't be served properly with their money they will panic.

For a majority of retail bots, the background knowledge necessary means a lot of users need to request help. A lot of forums are generally inaccessible for the common customer. This is especially true during bull markets. This is unacceptable.

Funguana will set up different channels as well as usable self-serve solutions to ensure users are able to be quickly serviced.

### **Too Simple of An Algorithm**

Markets are complicated. If people trade wrong they could quickly lose their money. The same is true for bots. If bots trade wrong people could easily lose their money and panic.

Most retail trading bots are way too simple for the user to reliably make a profit during different markets. They can't handle black swan events, pump and dumps, long-term trends, risk management and market manipulation. This makes it so that even if people use existing platforms, their funds are still insecure.

Funguana has spent a lot of upfront effort to ensure the trading bot algorithm created is highly adaptable, able to handle random events and handle risk for the user upfront. We have a background in various engineering such as Electrical and Computer Engineering, Computational Physics, Computational Finance, Complexity Science and Deep learning.

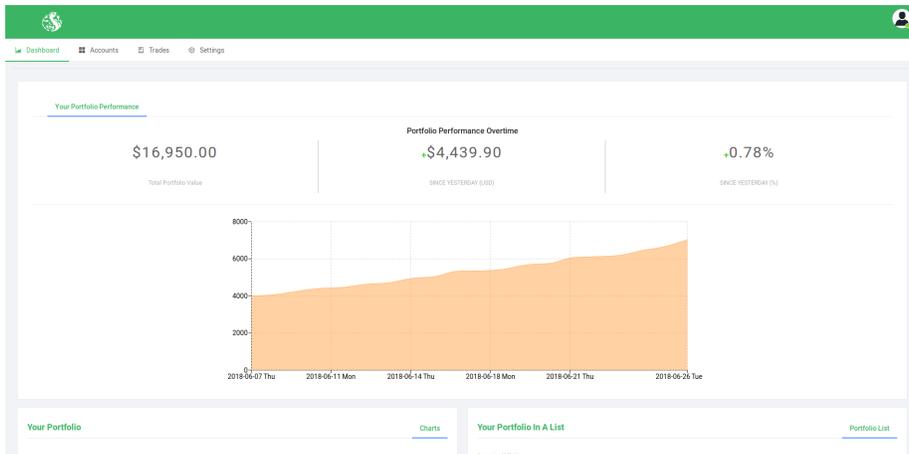
### **Poor Internationalization**

Blockchains are international. In the future they'll reach all 193 countries in the world. An automated trading platform for cryptocurrencies needs to be able to reach every country in the world.

Our team will be multilingual and will be able to handle the various groups of people from around the world.

### **UI & UX**

The UI & UX aims to be simple for Funguana. Here are product screenshots of the alpha version of the product:



**Accounts**

Key	Secret	Market	Action
*****	*****	binance	Delete
*****	*****	bittrax	Delete

**Add Account**

Exchange Name:

Secret Key:

Key:

Funguana ©2018 Created by Funguana, Inc

**Registration**

kuh.kevin.HH@gmail.com

.....

.....

**Name**

Kevin

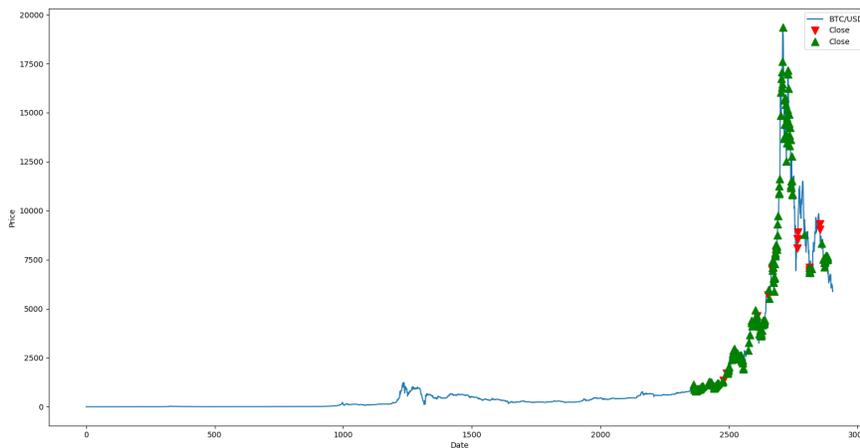
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## The Bot

Funguana did a lot of research to ensure the user get's the best possible experience. We developed a reasonably powerful bot, while also leaving much room for growth over the next few months to increase profits and limit user risk.

Funguana's bot will be comprised of 5 bots upon launch. Each bot will predict the price, and there will be a **judge** that overwatches their decisions to weigh which bots are most accurate. Our latest bot is based on convolutional neural networks CNNs. It can predict, on a daily basis, with 90% accuracy, if the price of the cryptocurrency will go up or down. Coupled with the 4 other bots, some based on technical analysis, some on sentiment and natural laws, the accuracy and order sizing can generate users up to 5% weekly even in this market.



## The Token

Funguana Coin (FNG)

Funguana will issue an TRX-20 token that natively runs on the Tron blockchain. There will be a initial cap of 300,000,000 FNG tokens. The number of tokens will remain 100% at that number until all expected coins are burned and there's a high active usage of tokens.

%	Amount	Participant
50%	150,000,000	ICO
40%	120,000,000	Founding Team
10%	30,000,000	Angel Investor/Presale

## **FNG Value & Repurchasing Plan**

A user can use FNG to pay for any and every service that Funguana Offers:

1. Subscription Fee
2. Priority Customer Service (using internal social network)
3. Teaching Classes
4. Purchasing Advertised Coins

When you use FNG you receive a discount:

### **Repurchasing Plan**

Every quarter Funguana will purchase use 20% of the earnings to buy back FNG and burn them, until we buy 50% of all the FNG (150MM) back. All buy-back transactions will be announced on the blockchain. We eventually will destroy 150MM FNG, leaving 150MM FNG remaining.

## **The Complementary Dapp**

To complement the advancement of Funguana the app, we propose creating a decentralized data exchange, where the user would be incentivized to share code for pulling from various data sources, and a decentralized model competition.

### **Data Acquisition**

The data acquisition system would rely on incentivizing users to collect and upload data. Funguana would have to create a public trust system that would ensure that bad data is not used for analysis. We will use a public annotation tool to classify and determine if data is the way it should be. It would use machine learning combined with annotations, to learn when a user is cheating.

### **Reputation**

As user's input proper data, we will reward the user a reputation to expediate the data process. In the event that a user inputs wrong data to trick the system into giving them money, their wallet will be classified as hazardous, and they will be removed.

### **Storage Rewards**

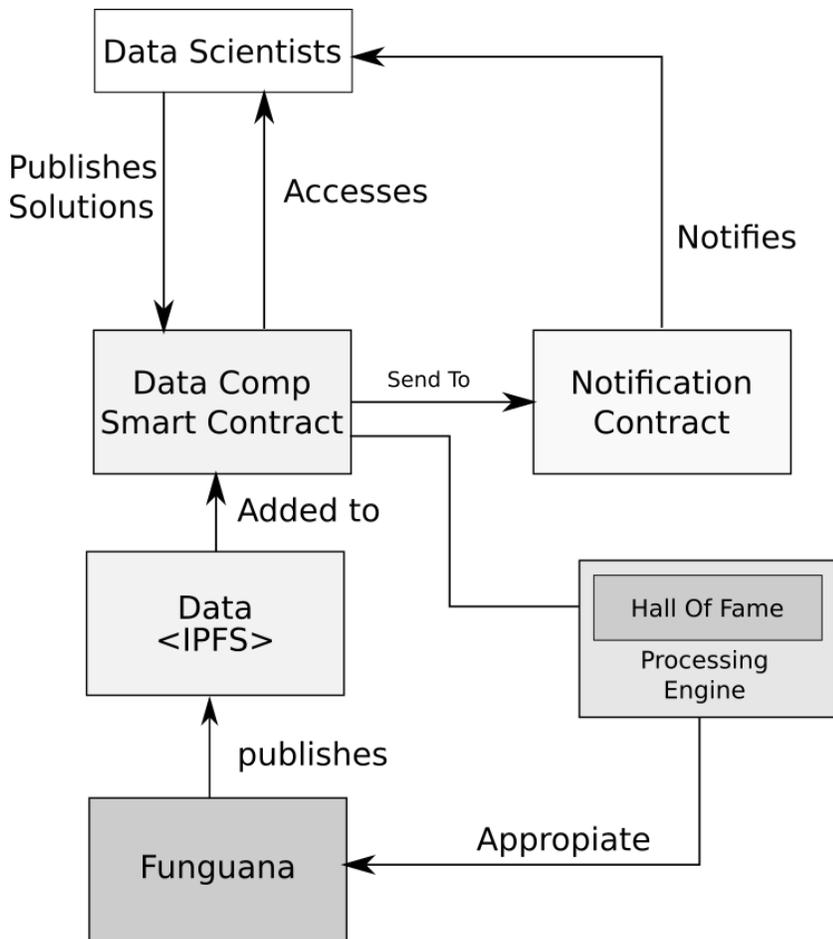
As users input data, they get FNG tokens as a reward for giving us that data. The data will be checked using a static analyzer if it is a pythonic acquisition file.

The static analyzer will be coupled with a dynamic analyzer to view the stdout output. If it matches appropriately, and doesn't follow improper conventions, we will accept the data temporarily. The FNG tokens are held until the annotators read the data or until the consumer trained AI annotators approve the outputs.

### Model Acquisition

To advance the program quickly, we'd use decentralization to making economically inefficient to both cheat the system, and to prevent overfit of our datasets.

### Weekly competitions



### Adaptive Systems

We'll use various forms of adaptive systems to increase the model's effectiveness.

## Revenue Model

Source	Description
Subscription Fee	The user will be charged anywhere between \$10-25 dollars a month depending on the user. This is to ensure stability of income to help us plan better and grow the business stably.
Exchange Partnerships	We'll partner with exchanges to draw users to them. They'll pay us per user we bring in. This will help future exchanges in the future draw in users.
Internal Trading Bot	We'll put a small portion of our profits every week and invest it into our own trading bot.
Specialized Fund Management	As our bots get stronger we'll be able to manage the funds for different organizations worldwide. If they hold larger sums of money on a single account, they will require more attention.
Token Advertisement	Official Tokens that get launched will be able to advertise on our platform. We'd only allow the best kinds of tokens.
Complementary Programs	Funguana will invest heavily into complementary programs in the future to boost the wellbeing of the community and increase revenue.

## The Roadmap

At this time, the pre-alpha is done. It has basic portfolio management, and is being tested by the team. Due to the volatile nature of the development process, we choose not to introduce it to the larger public until 3-6 weeks after the Soft-Cap is hit. We have the following features so far:

1. A multi-time scale trading system
2. Preliminary Order Sizing
3. New Event-Driven Backtesting Software
4. Deep Convolutional Neural Network predictions
5. A basic technical analysis system
6. A near complete portfolio management system

These features will be amplified, and very likely ready for larger release during the alpha launch. Here is the release schedule.

Stage	Description
Alpha Launch	<b>6 weeks</b> after the soft cap. The full-initial functionality will be available here. It will have Deep Learning predictions, hierarchical decision making, reinforcement learning and portfolio management, as well as adaptive optimization embedded within.
Closed-Beta Launch	<b>8 weeks</b> after the soft cap. Here we'll integrate whale alerts, using social graph theory and begin using computational physics models. Feature-wise, we'll also include more powerful portfolio management, stronger and more fluid adaptive systems. We'll begin reaching out to larger investors for higher money volume testing.
Decentralized Data Acquisition	<b>10 weeks</b> after the soft cap. We will launch a public data acquisition platform and payout users to both publish collection scripts (in python), as well as static sources.
Decentralized AI Acquisition	<b>11 weeks</b> Official Tokens that get launched will be able to advertise on our platform. We'd only allow the best kinds of tokens.
Open Launch	<b>12 weeks</b> after the soft cap is reached. By then we would have the necessary licenses to expand to multiple locations, and the infrastructure available for doing open research throughout the Tron Ecosystem.
Open Research	<b>18 weeks</b> after the soft cap. We will present a crucial research paper that will help improve the crypto-economics of the Tron platform with initial simulation software.
Tron DEX integration	<b>21 weeks</b> after the soft cap. We'll partner with various Tron DEXs to integrate ccxt for our models.
New Economic System Research	<b>30 weeks</b> after the soft cap. After researching and creating simulations, we'll present a whitepaper to the community to explain which projects can passively exponentially grow Tron.